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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,044	05/09/2005	Tiziano Ambrosini	05999.0011-00	3165

22852 7590 07/08/2010

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EXAMINER	
MCMAHON, MARGUERITE J	

ART UNIT	PAPER NUMBER
3741	

MAIL DATE	DELIVERY MODE
07/08/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,044	AMBROSINI ET AL.	
	Examiner	Art Unit	
	MARGUERITE J. MCMAHON	3741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/21/10*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-53 and 55-76* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39-53 and 55-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 39-53 and 55-76 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Note that the newly added negative limitation that the emulsifier is not an alkoxylated alkyl phenol is not supported by the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 39, 43, 44, 47-49, 51-53, 57-59, 63, 64, 66-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ford (3,756,794). Note a method for reducing emission of pollutants from an internal combustion engine including at least one combustion chamber, injecting a fuel emulsion comprising a liquid hydrocarbon fuel, water, at least one emulsifier, and at least one oxygen-containing water soluble

organic compound into the combustion chamber, igniting the fuel emulsion in the at least one combustion chamber in the presence of air, and operating the engine. Ford does not show the exact same ranges for the water and emulsifier as that claimed by Applicant, but the ranges overlap and are close enough to provide a prima facie case of obviousness. In addition, Ford does not specifically cite that the at least one emulsifier is not an **alkoxylated** alkyl phenol. The examiner does not know, and Applicant has not explained the significance of the alkyl phenol being alkoxylated. Applicant has stated that because one emulsifier mentioned in the Ford reference is an alkylphenol and an alkyleneoxide, that this means that the emulsifier is alkoxylated. The examiner questions whether or not this is the case. It is pointed out that the specification of the instant invention cited alkylphenols (page 13, line15) as an emulsifier which may be used in the instant invention. The examiner requests Applicant to explain the difference between an alkyl phenol which is not alkoxylated and an alkyl phenol which is aloxylated, and also to explain how he knows that the alkyl phenol utilized in the Ford reference **is** alkoxlated.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an emulsifier which is not an alkoxylated alkyl phenol, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same funcions as before Involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

Claims 39, 43, 44, 47-49, 51-53, 55-59, 63, 64, 66-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huffer et al (De 100 03 105) in view of Ford

(3,756,794). Note a method for reducing emission of pollutants from an internal combustion engine including at least one combustion chamber, injecting a fuel emulsion comprising a liquid hydrocarbon fuel, water, at least one emulsifier comprising a polyalkoxylated polyisobutene whose HLB value is between 2 and 6, and at least one oxygen-containing water soluble organic compound into the combustion chamber, igniting the fuel emulsion in the at least one combustion chamber in the presence of air, and operating the engine so as to reduce peak combustion temperature in the at least one combustion chamber. See example 4 which discloses an emulsion that contains 15 wt% of water and 5 wt% of methanol. Huffer et al does not show the exact same ranges for the water and emulsifier as that claimed by Applicant, but the ranges overlap and are close enough to provide a prima facie case of obviousness. In Huffer et al the at least one oxygen-containing water soluble organic compound is an alcohol rather than being selected from glycols, polyols, ethers, ketones, or mixtures thereof. It would have been an obvious matter of design choice to select a compound from one of these groups in lieu of methanol, particularly in view of the fact that Applicant originally claimed alcohol as one of the types of compounds (in canceled claim 54) and states in the specification, at page 11, that alcohols, such as methanol, may be employed as the at least one oxygen-containing water soluble organic compound. Alternatively, it would have been obvious to modify Huffer et al by Ford (3,756,794) since Ford teaches the use of polyols or glycols, by substituting the polyols or glycols for the methanol, since they are art recognized alternatives, known for the same purpose.

Claims 59-69, 72, and 73 are rejected under 35 U.S.C. 102(b) as being anticipated by Genova et al (EP-A-0 399 620) in view of Ford (3,756,794). Note a method for reducing emission of pollutants from an internal combustion engine including at least one combustion chamber, injecting a fuel emulsion comprising a liquid hydrocarbon fuel, water, at least one emulsifier, and at least one oxygen-containing water soluble organic compound into the combustion chamber, igniting the fuel emulsion in the at least one combustion chamber in the presence of air, and operating the engine so as to reduce peak combustion temperature in the at least one combustion chamber. Genova et al does not show the exact same ranges for the water and emulsifier as that claimed by Applicant, but the ranges overlap and are close enough to provide a prima facie case of obviousness. In Genova et al the at least one oxygen-containing water soluble organic compound is an alcohol rather than being selected from glycols, polyols, ethers, ketones, or mixtures thereof. It would have been an obvious matter of design choice to select a compound from one of these groups in lieu of methanol, particularly in view of the fact that Applicant originally claimed alcohol as one of the types of compounds in canceled claim 54 and states in the specification, at page 11, that alcohols such as methanol may be employed as the at least one oxygen-containing water soluble organic compound. Alternatively, it would have been obvious to modify Genova et al by Ford (3,756,794) since Ford teaches the use of polyols or glycols, by substituting the polyols or glycols for the alcohol, since they are art recognized alternatives, known for the same purpose.

Claims 59-69, 72, and 73 are rejected under 35 U.S.C. 102(b) as being anticipated by Schon et al (5,004,479) in view of Ford (3,756,794). Note a method for reducing emission of pollutants from an internal combustion engine including at least one combustion chamber, injecting a fuel emulsion comprising a liquid hydrocarbon fuel, water, at least one emulsifier, and at least one oxygen-containing water soluble organic compound into the combustion chamber, igniting the fuel emulsion in the at least one combustion chamber in the presence of air, and operating the engine so as to reduce peak combustion temperature in the at least one combustion chamber. Schon et al does not show the exact same ranges for the water and emulsifier as that claimed by Applicant, but the ranges overlap and are close enough to provide a prima facie case of obviousness. In Schon et al the at least one oxygen-containing water soluble organic compound is an alcohol rather than being selected from glycols, polyols, ethers, ketones, or mixtures thereof. It would have been an obvious matter of design choice to select a compound from one of these groups in lieu of methanol, particularly in view of the fact that Applicant originally claimed alcohol as one of the types of compounds in canceled claim 54 and states in the specification, at page 11, that alcohols such as methanol may be employed as the at least one oxygen-containing water soluble organic compound. Alternatively, it would have been obvious to modify Schon et al by Ford (3,756,794) since Ford teaches the use of polyols or glycols, by substituting the polyols or glycols for the methanol, since they are art recognized alternatives, known for the same purpose.

Claims 40-42, 45, 46, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huffer et al (De 100 03 105) in view of Ford (3,756,794) as applied to claims 39, 43, 44, 47-49, 51-59, 63, 64, 66-76, and further in view of Beck et al (6,598,584). Huffer et al in view of Ford show everything except the specific ranges for water and emulsifier and employing EGR, controlling injection timing, and compressing and cooling intake air. It has been noted in the above rejection that the ranges shown by Huffer et al overlap and are close enough to provide a prima facie case of obviousness. Beck et al teach that it is old in the art to employ EGR, controlling injection timing, and compressing and cooling intake air. It would have been obvious to one having ordinary skill in the art to modify Huffer et al in view of Ford by employing EGR, controlling injection timing, and compressing and cooling intake air, in order to reduce peak combustion temperature. Note that these features are also acknowledged by Applicant in the specification to be conventional.

Response to Arguments

Applicant's arguments filed 5/21/10 have been fully considered but they are not persuasive. With respect to the Ford reference employed in the rejection of claims 39, 43, 44, 47-49, 51-53, 57-59, 63, 64, 66-76, Applicant's arguments are not convincing for the following reasons:

(1) Applicant has not convinced the examiner that it is appropriate, based on the lack of support in the specification, to exclude alkoxylated alkyl phenols from the long list of types of emulsifiers which may be employed.

(2) Applicant has not explained what *alkoxylated* alkyl phenols are or provided any rationale for the purpose of excluding this type of emulsifier from the long list of emulsifiers which may be employed.

(3) Applicant has not convinced the examiner that the alkyl phenol employed in the Ford reference is necessarily alkoxylated.

Applicant's arguments with respect to the rest of the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marguerite J. McMahon whose telephone number is

571-272-4848. The examiner can normally be reached on Monday- Friday, 10am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cuff can be reached on 571-272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marguerite McMahon
Primary Examiner
Art Unit 3741

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